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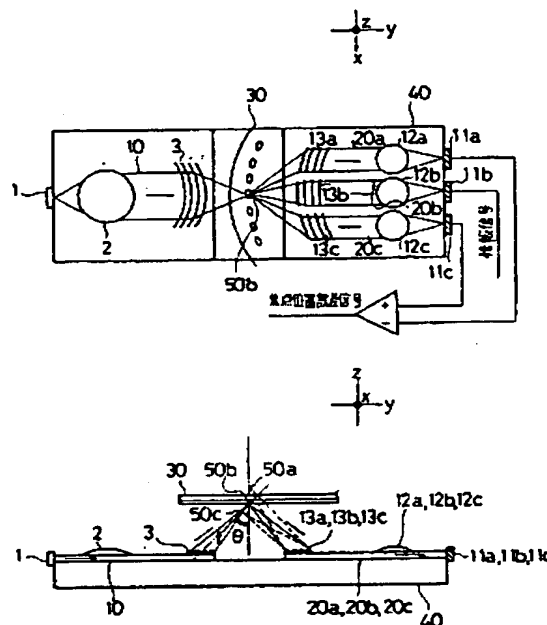
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TITLE : OPTICAL PICKUP



ABSTRACT : PURPOSE: To constitute a useful micro-optical pickup by detecting a focus position error signal of a light spot to an optical information storage medium, from a difference signal of detecting outputs of the first and the second photodetectors.

CONSTITUTION: A light wave which is emitted from a semiconductor laser 1 is propagated in an optical waveguide layer 10, and reaches an unequal interval curve diffraction grating 3 through a thin film lens 2. Subsequently, by the grating 3 which is brought to an irregularity working by the cutting work of an electron beam lithography equipment the light wave forms light spots 50a, 50b, and 50c on an optical disk 30 being in the upper part on the grating, or its vicinity. On the other hand, on optical waveguide layers 20a, 20b, and 20c, unequal interval curve diffraction gratings 13a, 13b, and 13c are provided, the light wave which is reflected by the disk 30 is led to the layers 20a, 20b and 20c, and the reflected light which is propagated through each layer passes through thin film lenses 12a, 12b, and 12c, and reaches photodetectors 11a, 11b, and 11c. In such a case, the reflected light forms symmetrically virtual spots 50a, 50c against the light spot 50b, therefore, from a detecting signal difference of the detectors 11a, 11b, a focus error signal is obtained.

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